REMARKS

In the Office Action, claims 14-26 are rejected under 35 U.S.C. §102 and the Abstract of the Disclosure is objected to. Claims 14-26 have been cancelled without prejudice or disclaimer. New claims 27-28 have been added in place thereof. Applicants respectfully submit that the rejections have been overcome for at least the reasons below.

At the outset, the Abstract was objected to because it was written in multiple paragraphs. Applicants have amended the Abstract accordingly and submit that the objections have been overcome.

In the Office Action, claims 14-26 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,773,692 to Pecharsky et al. ("Pecharsky"). The rejections of claims 14-26 has been rendered moot in view of cancellation of same. However, Applicants respectfully request that claim 27 (essentially incorporating the elements of cancelled claims 14-20) and claim 28 (essentially incorporating the elements of cancelled claims 21-26) be examined in place thereof.

New claim 27 recites a hydrogen occluding material in the form of a fine powder capable of hydrogenation and/or dehydrogenation of hydrogen molecules or hydrogen atoms at about 200°C or below and under adequate control of pressure. The hydrogen occluding material includes an aluminum hydride having a formula AlH_x, where $0 \leq x \leq 3$, and a dopant functioning as a catalyst, wherein the dopant includes at least one species selected from transition metals belonging to groups III to V of the periodic table including at least one of chromium, iron, nickel, and alkali metals, and compounds thereof, and wherein an amount of the dopant ranges from about 0.2 mol% to about 10 mol% of an amount of the aluminum hydride. New claim 28 recites a method of using a hydrogen occluding material, the hydrogen occluding material substantially as claimed in claim 27.

Applicants have surprisingly discovered that by isolating AlH_3 alone and using it as a new hydrogen occluding material that it would release as much hydrogen as 10.0 wt% theoretically. See, Specification, pg. 6, lines 14-18. Applicants show in Example 1 and in Fig. 1 that AlH_3, which is the hydrogen occluding material according to the present invention, releases hydrogen at a lower temperature than $NaAlH_4$. It is also apparent that AlH_3 releases hydrogen in one stage, whereas $NaAlH_4$ releases hydrogen (due to thermal dissociation) in two stages. The

hatched area in Fig. 1 corresponds to the amount of hydrogen released. Therefore, it is apparent that AlH_3 releases more hydrogen than $NaAlH_4$. The amount of hydrogen released from AlH_3 is 9 wt%, which is close to the theoretical value. See, Specification, pg. 11, line 25 to pg. 12, line 2.

On the contrary, alanates ($XAlH_4$, where X = Na, Li, and the like) typified by $NaAlH_4$ mentioned above, are much more limited in the amount of hydrogen released (which is theoretically limited to 5.6 wt%). See, Specification, pg. 4, line 24 to pg. 5 line 5. Higher hydrogen content alanates or complex alkali metal derivatives of aluminum hydrides (i.e., where H_n is an integer between 3 and 6) such as $LiAlH_4$ appear to be the focus of Pecharsky. Accordingly, the solid hydrogen occluding materials exemplified in Pecharsky are limited to a much lower theoretical hydrogen capacity. Indeed, Pecharsky discloses that that pure gaseous hydrogen can be obtained in required quantities of at least 4.5 wt% of hydrogen. See, Pecharsky, col. 4, lines 28-29. Pecharsky appears to characterize 4.5 wt% storage capacity as an "ultra-high capacity hydrogen storage solid" and does not appear to contemplate the ability to achieve the much higher capacity of 9.0 wt% hydrogen achieved by the presently claimed invention. See, Pecharsky, col. 1, lines 51-52. Moreover, Examples 1-4 in Pecharsky evidence the failure of Pecharsky to achieve a hydrogen production rate greater than 5.2 wt% (see especially Example 1). Applicants respectfully submit that the generic chemical compositions provided in Pecharsky are too broad and the examples effectively teach away from hydrogen occluding material claimed in the present invention.

For at least the reasons given above, Applicants believe that Pecharsky fails to anticipate claims 27 and 28. Accordingly, Applicants respectfully request the withdrawal of the anticipation rejection with respect to claims 27 and 28.

For the foregoing reasons, Applicants submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

BELL, BOYD & LLOYD LLC

BY _____
Thomas C. Basso
Reg. No. 46,541
Customer No. 29175

Dated: November 7, 2005